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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,107	07/30/2003	Noah Horton	100110403-1	8320

22879 7590 02/09/2005

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EXAMINER

BRAUTIGAM, ALYSA N

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/630,107

**Applicant(s)**

HORTON ET AL.

**Examiner**

Alysa N. Brautigam

**Art Unit**

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7, 16 and 20-25 is/are allowed.
- 6) ☒ Claim(s) 8-11, 14, 15, 17 and 26-31 is/are rejected.
- 7) ☒ Claim(s) 12, 13, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT/Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 30 July 2003.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "156" and "158" in Figure 9 have both been used to designate generalized output devices. Based on the specification (paragraphs 0054-0055), item 156 should remain but be more generally labeled as "output device" and item 158 should be eliminated from the drawing.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:
  - Figure 6, Item 81 – see pages 14-15 of the specification
  - Figure 7, Item 81 – see pages 14-15 of the specification
  - Figure 9, Item 158
  - Figure 14, Item 457
  - Figure 15, Item 531 – see page 32, line 5 of the specification where it appears this item should be labeled "551"
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the

application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Specification***

4. The disclosure is objected to because of the following informalities:
- Paragraph 0032, line 11 – "luminosity value [may] be a value..."
  - Paragraph 0081 – Text accompanying block 275 of Figure 12 should more consistent with the text in the block
  - Paragraph 0092 – Text accompanying block 515 of Figure 15 should more consistent with the text in the block

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claim 29 recites the limitations “wherein the prioritizing is based on the determining” in line 3. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 8-11, 14-15, 17, 26-28, and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Malzbender et al. (U.S. Patent Application Number: 2002/0060679).

9. In regards to claim 8, Malzbender discloses a texture mapping system, comprising:

- memory for storing a first texture map and a parametric texture map (figure 1 and paragraphs 0022-0023 disclose the memory for storing the texture maps; paragraphs 0028-0029 discloses the plurality of texture maps); and a
- texture map manager (Figure 1, Item 14 discloses the graphics processor which performs the functions of a texture map manager, it is further noted that Applicant has disclosed a “graphics adapter” [figure 9, item 142 in Applicant's specification] as performing the function of the texture map

manager) configured to receive a command to combine at least a portion of the first texture map and at least a portion of the parametric texture map (paragraphs 0028 and 0029 disclose the combination of texture map portions; paragraphs 0013, 0024, 0026, 0028, 0032, 0039 all disclose the input of user data such that it is clear the graphics adapter is configured to receive commands regarding the combination of texture maps; paragraphs 0046 discloses further embodiments combining a PTM with another texture map) the

- texture map manager configured to convert, in response to the command, the first texture map portion into a form corresponding to a form of the parametric texture map portion (paragraphs 0050, 0051, and 0052 disclose the conversion of texture map portions from one form into another where, it is noted, Applicant has defined the “form” or “type” as a difference in data [page 32, paragraph 0098 of Applicant’s specification]) and to combine the first texture map portion and the parametric texture map portion (paragraphs 0028, 0029, and 0052 disclose the combination of texture map portions; paragraphs 0013, 0024, 0026, 0028, 0032, 0039 all disclose the input of user data such that it is clear the graphics adapter is configured to receive commands regarding the combination of texture maps).

10. In regards to claim 9, Malzbender discloses the system of claim 8, wherein the first texture map is a parametric texture map (paragraph 0013 and throughout disclose the parametric texture maps).

11. In regards to claim 10, Malzbender discloses the system of claim 8, wherein the parametric texture map portion defines a plurality of texels (paragraph 0027), each of the texels defining a luminosity value that is a function of light direction (paragraph 0038 discloses texel defining a luminosity value; paragraph 0013 defines these values as a function of light direction).

12. In regards to claim 11, Malzbender discloses the system of claim 8, wherein the texture map manager, in converting the first texture map portion, is configured to assign a predetermined value to at least one texel of the first texture map portion (paragraph 0025 and, more particularly, paragraph 0027 discloses the predetermined values assigned to the texels of the texture map portions).

13. In regards to claim 14, Malzbender discloses the system of claim 8, wherein the texture map manager, in converting the first texture map portion, is configured to define a new luminosity value for a texel of the first texture map portion (Figure 3 and paragraph 0032 disclose the texture map manager configured to define a new luminosity values based upon user-input).

14. In regards to claim 15, Malzbender discloses the system of claim 14, wherein the new luminosity value is a function of light direction (paragraph 0032 discloses the "user-defined" value as a "light source vector").

15. In regards to claim 17, Malzbender discloses a texture mapping system, comprising:

- means for storing a first texture map and a parametric texture map (figure 1 and paragraphs 0022-0023 disclose the memory for storing the texture maps; paragraphs 0028-0029 discloses the plurality of texture maps); and
- means for combining (Figure 1, Item 14 discloses the graphics processor which performs the functions of a texture map manager, it is further noted that Applicant has disclosed a "graphics adapter" [figure 9, item 142 in Applicant's specification] as performing the function of the texture map manager), in response to a command, the first texture map and a parametric texture map thereby forming a combined texture map (paragraphs 0028 and 0029 disclose the combination of texture map portions; paragraphs 0013, 0024, 0026, 0028, 0032, 0039 all disclose the input of user data such that it is clear the graphics adapter is configured to receive commands regarding the combination of texture maps; paragraphs 0046 discloses further embodiments combining a PTM with another texture map),
- the combining means configured to convert, in response to the command, the first texture map portion into a form compatible with a form of the parametric texture map portion (paragraphs 0050, 0051, and 0052 disclose the conversion of texture map portions from one form into another where, it is noted, Applicant has defined the "form" or "type" as a



difference in data [page 32, paragraph 0098 of Applicant's specification]) and to combine the first texture map portion and the parametric texture map portion (paragraphs 0028, 0029, and 0052 disclose the combination of texture map portions; paragraphs 0013, 0024, 0026, 0028, 0032, 0039 all disclose the input of user data such that it is clear the graphics adapter is configured to receive commands regarding the combination of texture maps).

16. In regards to claim 26, Malzbender discloses a texture mapping method, comprising:

- receiving a command to combine at least a portion of a first texture map and at least a portion of a parametric texture map (paragraphs 0028 and 0029 disclose the combination of texture map portions; paragraphs 0013, 0024, 0026, 0028, 0032, 0039 all disclose the input of user data such that it is clear the graphics adapter is configured to receive commands regarding the combination of texture maps; paragraph 0046 discloses further embodiments combining a PTM with another texture map);
- converting, in response to the command, the first texture map into a form compatible with a form of the parametric texture map portion (paragraphs 0050, 0051, and 0052 disclose the conversion of texture map portions from one form into another where, it is noted, Applicant has defined the "form" or "type" as a difference in data [page 32, paragraph 0098 of Applicant's specification]) and to combine the first texture map portion and

the parametric texture map portion (paragraphs 0028, 0029, and 0052 disclose the combination of texture map portions; paragraphs 0013, 0024, 0026, 0028, 0032, 0039 all disclose the input of user data such that it is clear the graphics adapter is configured to receive commands regarding the combination of texture maps); and

- combining the first texture map portion and the parametric texture map portion in response to the command (paragraphs 0028 and 0029 disclose the combination of texture map portions; paragraphs 0013, 0024, 0026, 0028, 0032, 0039 all disclose the input of user data such that it is clear the graphics adapter is configured to receive commands regarding the combination of texture maps; paragraph 0046 discloses further embodiments combining a PTM with another texture map).

17. In regards to claim 27, Malzbender discloses the method of claim 26, wherein the first texture map is a parametric texture map (paragraph 0013 and throughout disclose the parametric texture maps).

18. In regards to claim 28, Malzbender discloses the method of claim 26, wherein the converting further comprises assigning a predetermined value to at least one texel of the first texture map portion (paragraph 0025 and, more particularly, paragraph 0027 discloses the predetermined values assigned to the texels of the texture map portions).

19. In regards to claim 30, Malzbender discloses the method of claim 26, wherein the converting further comprises defining a new luminosity value for a texel of the first

texture map portion (Figure 3 and paragraph 0032 disclose the texture map manager configured to define a new luminosity values based upon user-input).

20. In regards to claim 31, Malzbender discloses the method of claim 30, wherein the luminosity value is a function of light direction (paragraph 0032 discloses the “user-defined” value as a “light source vector”).

***Allowable Subject Matter***

21. Claims 1-7, 16, and 20-25 are allowed.

22. The following is an examiner's statement of reasons for allowance:

23. While prior art clearly teaches memory for storing texture maps and parametric texture maps as well texture map managers to convert and combine texture maps, prior art fails to teach or suggest, either alone or in combination, a texture mapping system comprising a texture map manager configured to “determine a texture map type for the first texture map and a texture map type for the parametric texture map and to perform a prioritization of the texture map portions based on the determined texture map types.”

In addition, prior art does not teach or suggest the “texture map manager further configured to select, for conversion, one of the texture map portions **based on the prioritization.**”

24. The closest prior art, although not entirely as claimed, discloses the background of polynomial texture maps (equivalent to Applicant's parametric texture maps) including the desirability of combining texture maps and conversion of texture maps from one type to another.

25. Malzbender et al. ("Polynomial Texture Maps") discloses the acquisition of polynomial texture maps by means of photographic equipment. Malzbender also discloses the conversion of bump maps to polynomial texture maps and the combination of a plurality of texture maps. However, Malzbender does not teach or suggest the determination of texture map type by a texture map manager nor does Malzbender disclose prioritization and conversion based on said prioritization.

26. Malzbender et al. (U.S. Patent Application Number : 2002/0060679) discloses a method and apparatus for 3D objects with parametric texture maps including one embodiment in which "a parametric texture map may be adapted to a particular color channel of a display" and wherein "different blending modes" can be used to combine "parametric texture map evaluation results with calculated lighting, texture maps, or other sources during texture blending." However, Malzbender does not teach or suggest the determination of texture map type by a texture map manager nor does Malzbender disclose prioritization and conversion based on said prioritization.

27. Hel-Or et al. ("Synthesis of Reflectance Function Textures from Examples") discloses a method for leveraging the image-based representation of polynomial texture maps for the purposes of synthesizing textures. Hel-Or discloses wherein the polynomial texture maps can be used in place of conventional texture maps and applied to 3D objects. Hel-Or further discloses the plurality of texture map forms similar to that disclosed by Applicant. However, Hel-Or does not teach or suggest the determination of texture map type by a texture map manager nor does Hel-Or disclose prioritization and conversion based on said prioritization.

28. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

29. Claims 12-13, 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

30. The following is a statement of reasons for the indication of allowable subject matter: While prior art clearly teaches memory for storing texture maps and parametric texture maps as well texture map managers to convert and combine texture maps, prior art fails to teach or suggest, either alone or in combination, a texture mapping system comprising a texture map manager configured to "determine a texture map type for the first texture map and a texture map type for the parametric texture map and to perform a prioritization of the texture map portions based on the determined texture map types." In addition, prior art does not teach or suggest the "texture map manager further configured to select the first texture map for conversion **based on the prioritization.**"

31. Claim 29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

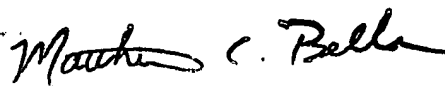
**Conclusion**

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alysa N. Brautigam whose telephone number is 703-305-8631. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 703-308-6829. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

anb

  
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